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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/000,367	12/04/2001	Yuko Fujihira	SON-2296	9778

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EXAMINER

MCCLENDON, SANZA L

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 07/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/000,367

Applicant(s)

FUJIHIRA ET AL.

Examiner

Sanza L McClendon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 34-37, 48-61 and 63-65 is/are allowed.
- 6) ☒ Claim(s) 1, 5, 25, 29, 30, 38 and 40 is/are rejected.
- 7) ☒ Claim(s) 3, 7, 9, 11, 13, 15, 17, 19, 21, 23, 26-28, 31-33, 39, 41-47 and 62 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Claim Objections

1. Claim 62 is objected to because of the following informalities: Claim 67 has a limitation for an organic nucleating agent in lines 5-6, however there is no nucleating agent in the method or method composition. Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claim 1 and 5 and rejected under 35 U.S.C. 102(b) as being anticipated by Michiyuki et al (JP 62-152720).

JP 62-152720 teaches manufacture of high strength polyvinyl alcohol molded parts with high elasticity modulus. Said manufacture method includes irradiating said polyvinyl alcohol with microwave irradiation. This appears to anticipate claim 1.

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Claim Rejections - 35 USC § 102/35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 25, 29, 30, 38, and 40 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Matsudaira et al (US 6,096,431).

Matsudaira et al teaches biodegradable cards. Said biodegradable cards comprise a biodegradable thermoplastic resin composition comprising a polylactic acid. Per examples, Matsudaira et al teaches adding 35% by weight of mica and extrusion molding. Matsudaira et al does not expressly teach that said mica is natural mica. However, it would have been obvious to use a natural mica filler because it

With respect to the limitations in claims 25 and 40 that states "natural mica" in the case of claim 25 or "synthetic mica" in the case of claim 40, it is noted that Matsudaira et al does not explicitly teach whether the mica is a synthetic or natural mica, however applicant fails to establish the criticality of such filler and the examiner believes that one of ordinary skill in the art would have found it obvious to use either natural or synthetic mica in the biodegradable resin composition because they assist in increasing mechanical properties of compositions comprising them in the absence of unexpected results.

Allowable Subject Matter

6. Claims 3, 7, 9, 11, 13, 15, 17, 19, 21, 23, 26-28, 31-33, 39, and 41-47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in

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independent form including all of the limitations of the base claim and any intervening claims.

7. The following is a statement of reasons for the indication of allowable subject matter: the prior art fails to teach the method of claim 1 wherein the microwave heating step is done in a time range from 1 to 10 minutes, the biodegradable resin is polylactic acid comprising an additive, such as a carbodiimide, for suppressing hydrolysis, nor does the prior art teach that the biodegradable resin is mix with a mica filler, synthetic or natural. The prior art fails to teach a biodegradable resin composition comprising a biodegradable resin and natural mica, wherein the natural mica is a agglomerate comprising an acrylic resin, epoxy resin or urethane resin as binder and having a diameter of 15 to 140 μ m. Nor does the prior art teach the above defined biodegradable resin composition further comprising an additive for suppressing hydrolysis, such as a carbodiimide. Nor does the prior art teach a biodegradable resin composition comprising a biodegradable resin and synthetic mica as a crystal-nucleating agent, which is non-swellable, which further comprises an additive for suppressing hydrolysis.

8. Claims 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24, 34-37, 48-61 and 63-65 are allowed.

9. The following is an examiner's statement of reasons for allowance: the prior art fails to teach a method for improving a biodegradable resin material in elastic modulus, wherein the material is comprised mainly of a biodegradable resin, and the method comprises injecting said biodegradable resin material into a mold to form an injection molded product and irradiating said molded product with microwaves. The prior art fails to teach a housing material comprising a biodegradable resin composition, which comprises a biodegradable resin and natural mica. The prior art fails to teach a housing material comprising a biodegradable resin composition, which comprises an aliphatic polyester resin and synthetic mica, as an organic nucleating agent. The prior art fails to teach a method for producing a biodegradable resin as defined above comprising kneading together at a temperature range from 150 to 200 $^{\circ}$ C the aliphatic polyester resin and synthetic mica in the amounts from 0.5 to 20.0 wt%.

The prior art does not explicitly teach and/or fairly suggest a method of improving the elastic modulus of a biodegradable resin comprising synthetic mica and an aliphatic polyester resin by comprising a step of allowing said resin composition to stand from 30 to

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180 seconds while heating at 80 to 130 OC. Or comprising the steps of injecting said resin composition into a mold to form an injection-molded product and heating said molded product at 80 to 130 OC for 30 to 180 seconds. Nor comprising the step of injecting into a mold whose inner surface is heated by radio frequency induction heating the biodegradable resin composition to form an injection molded product and heating said product in the mold at 80 to 130 OC for 30 to 180 seconds.

The prior art fails to teach a biodegradable resin composition comprising an aliphatic polyester resin, an organic nucleating agent and natural mica. Nor does the prior art teach a housing material comprising the previously mentioned biodegradable composition. The prior art does not explicitly teach and/or fairly suggest a method of improving the elastic modulus of a biodegradable resin comprising an organic nucleating agent, natural mica and an aliphatic polyester resin by comprising a step of allowing said resin composition to stand form 30 to 180 seconds while heating at 80 to 130 OC. Or comprising the steps of injecting said resin composition into a mold to form an injection-molded product and heating said molded product at 80 to 130 OC for 30 to 180 seconds. Nor comprising the step of injecting into a mold whose inner surface is heated by radio frequency induction heating the biodegradable resin composition to form an injection molded product and heating said product in the mold at 80 to 130 OC for 30 to 180 seconds.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sanza L McClendon whose telephone number is (703) 305-0505. The examiner can normally be reached on Monday through Friday 8:00 to 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (703) 308-2462. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0657.

Sanza L McClendon

Examiner

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July 13, 2003



James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700